

## APPENDIX

## NOTES FOR FOMC MEETING

May 14, 1991

Margaret L. Greene

The sharp recovery in the dollar that occurred during most of the previous intermeeting period carried over into the first week of the current one, when the dollar temporarily breached Y140 and DM1.72 at the end of March. Thereafter, the dollar's advance lost momentum. Market participants questioned the near-term outlook for the major currencies given a number of uncertainties--first about the timing and the extent of U.S. economic recovery, second about developments in Germany and Japan, and more generally about official attitudes toward exchange rates. Yet, market sentiment remained biased toward the dollar and market professionals were wary of the possibility that it might renew its advance. Under these circumstances, the dollar fluctuated nervously and at times widely, showing somewhat more strength against the mark than against the yen, but little net change on balance over the period. The U.S. monetary authorities did not intervene during the period. Other major central banks did intervene, however, to sell a total of \$2.6 billion in discrete episodes at the end of March, late April, and early May.

A major preoccupation of the exchange markets during the period was the outlook for the U.S. economy. For a time after the Persian Gulf war, market participants believed that euphoria over the decisive victory would lead to a quick rebound in domestic spending and they shrugged off signs of economic weakness for the early months of 1991.

But as data started to be released for the period since the war's end, market participants were anxious to find confirmation of their optimistic assessment of the U.S. outlook. Although forward-looking indicators improved markedly, other statistics did not suggest a swift recovery was underway. As more data became available, such as the employment data for March, some of the dollar optimism waned.

Another factor influencing exchange markets during the period was the continuing uncertainty about developments affecting Germany. Market participants were getting increasingly reconciled to the harshness of the economic adjustments taking place in East Germany. As a result, German economic statistics that were released during the period seemed to have less of an effect on market psychology this time than they had had before. It was, instead, the political manifestation of growing dissatisfaction with the German leadership's handling of unification as well as the possible impact of a deteriorating political situation in the Soviet Union that attracted the market's attention during April. Ahead of a local election in Chancellor Kohl's home state on April 21 and following the defeat of the ruling Christian Democratic Party in that election, there was a particularly pronounced weakening of the mark against both the dollar and other currencies.

The situation in Japan, the prospects for monetary policy there, and the outlook for renewed capital outflows from Japan also remained a source of uncertainty. For months market participants had been looking for signs that the Bank of Japan would soon relent from its tight monetary policy. To be sure, few had expected action so early in the new fiscal year that started in April. But the fact that the

Bank of Japan officials kept up their anti-inflationary rhetoric and the central bank engaged in money market operations designed to hold interest rates firm kept hopes of some early ease in check and helped support the yen. At the same time, market participants were unsure what new strategies Japan's large institutional investors would be adopting this year and the prospect of some new outflows at times undermined the yen.

Meanwhile, exchange market conditions themselves had been a source of uncertainty. Whereas few were surprised that the dollar had strengthened from its lows of mid-February, many questioned the scope for further significant gains from the levels reached in late March. Many market operators had been unprepared for the force of the rate move or the persistence of the dollar's advance. For those that followed so-called technical charts, the fact that the dollar had not fallen back appreciably during the course of the March rise was of particular concern. This lack of a "technical correction" presented two risks. Either the dollar would soon be vulnerable to a sizeable retrenchment or the dollar's recovery was so exceptional as to defy normal patterns of trading behavior or price movement and the currency would go higher still.

It was in this context that the Finance Ministers and Central Bank Governors of the Group of Seven were scheduled to meet in late April. The market's anxieties about developments in the three major industrialized countries and about exchange rates, together with talk of slowing economies elsewhere, gave rise to expectations during April that the G-7 communique would reveal some commitment to stem the dollar's rise, or at least to support the German mark, through

intervention, coordinated interest rate moves, or both. One scenario that many market participants imagined might emerge from the discussions was that the United States and Japan would lower interest rates to relieve pressure on the Bundesbank to raise rates. Such an action was thought also to enhance the possibility that other G-7 countries might be able to lower rates to support their own economies. As long as a scenario like this one appeared realistic, bidding for dollars remained subdued.

In the event, the G-7 meeting was seen in the market as providing little guidance about exchange rates and to have ended without a coordinated plan for interest rates. In the market's first reaction to the communiques, the dollar spurted up on April 29 to reach its high of the period against the mark at DM1.7835 before beginning to ease back. Then, on April 30, the Federal Reserve moved to lower the discount rate. Although market participants had recognized the possibility that the Fed might move one last time to jump-start the economy, they were surprised by the timing and the fact that a move occurred when there was no evidence of coordinated interest rate cuts abroad. The dollar therefore continued its tumble to DM1.6845. Thus, in just 46 hours the dollar dropped a full 10 pfennigs, or 5-1/2 percent.

Since then, the dollar has been holding tentatively about halfway between these two extremes against the mark while starting to creep up again above Y139 against the yen. Japanese officials say they fear the yen to be vulnerable if the dollar were able to move convincingly above Y140. The Bank of Japan intervened in late March and again

yesterday, both times when the dollar approached that level, to sell during the period.

The Bundesbank continues to prefer to see the mark strong to help finance the reconstruction of East Germany in the most non-inflationary way. As the dollar has recovered, Bundesbank officials have been anxious that a weak mark psychology not develop for fear that nominal interest rates might have to move even higher than they are now. For this reason, the Germans intervened in some size, selling in late March and in 3 days in which they operated after the local elections three weeks ago. The Bundesbank invited other European central banks to join and some did, selling an additional in March and in April.

In March, we had indicated a willingness to be cooperative in coordinated interventions but these operations occurred during the European mornings, not during our trading session, so the question of our operating did not come up. In the latest episode, the Desk was not explicitly asked to follow up the German interventions with operations of our own in New York, and we did not see any reason to do so.

This concludes my report, Mr. Chairman, on foreign exchange market developments. Just one last point, to bring the Committee up to date on other operations: The special swap facility between the Treasury, the National Bank of Romania and the Government of the Republic of Romania expired March 29.

Thank you.

FOMC NOTES  
PETER D. STERNLIGHT  
WASHINGTON, D.C.  
MAY 14, 1991

For several weeks following the March meeting, the Desk sought to maintain the degree of reserve pressure desired since before that meeting, with Federal funds expected to trade around 6 percent. Then, following the April 30 reduction in the discount rate and the decision that half of that 50 basis point cut should be passed through to the funds rate, operations were conducted with an anticipation of funds trading around 5 3/4 percent. Consistent with this move, the borrowing allowance was raised by \$25 million to encourage funds to be a shade above the new discount rate. The borrowing allowance was also boosted twice for technical reasons, each time by \$25 million, once in mid-April and again in early May, in recognition of the typical rise in seasonal borrowing at this time of year. In all, the borrowing allowance was increased by \$75 million to \$200 million. Actual borrowing was in fact fairly steady over the period, averaging roughly in the \$150 million area for each of the full maintenance periods and close to \$170 million thus far in the current period.

The funds rate also was fairly steady over the interval, compared with the volatile behavior earlier in the year and certainly as compared with the exceptional volatility around

year-end. Following some mild pressures around the March quarter end that saw funds a little over 6 percent, funds then tended during much of April to sag a bit below the expected 6 percent rate. This appeared to reflect a combination of market anticipation of another easing step, and some persistent forecast misses on the reserve-adding side. For the most part, the market retained a clear perception of the central bank's expected equilibrium rate, but at one point when those market perceptions seemed to be wavering, we stepped in with some early-in-the day action to extract reserves and underscore the System's unchanged policy stance. When a policy shift was undertaken at the end of April it was readily communicated to the market by passing through some customer repurchase agreements to the market, just after the discount rate announcement and at a time when funds were trading somewhat below the previous expected equilibrium level. Since the end of April, funds have averaged close to the now desired 5 3/4 percent central point.

Outright operations were modest during the period, and were concentrated in the early portion when the Desk arranged to buy about \$1.4 billion of notes and \$900 million of bills from foreign official accounts. Except for a modest redemption of agency issues, there was no outright transaction for the System after April 4. Reserve needs were more uncertain and changeable than usual, a background that lends itself to very short term injections or extractions of central bank money. Uncertainties about the Treasury balance were a particular source of short-term changeability in the outlook, while the behavior of currency and



required reserves also contributed. Relatively heavy use was made of short-term matched sale-purchase transactions to absorb reserves in small measured doses. These were arranged in the market on fifteen separate occasions. Repurchase agreements to provide reserves temporarily were executed on ten occasions, five times for the System, and five for customer related accounts (including an entry today).

Short-term interest rates generally declined over the intermeeting period, in many cases by somewhat more than the perceived 25 basis point cut in the expected Fed funds rate. The economy was seen as still declining, though perhaps getting near a bottom, while inflation measures reported during the period moderated considerably from those seen earlier in the year. Against this background, a good part of the rate decline came before the April 30 discount rate cut and perceived Fed funds reduction. Over the period, Treasury bill rates came down by about 20 to 40 basis points, with the larger declines for shorter maturities. In yesterday's auctions, the 3- and 6-month issues sold at average discount rates of 5.50 and 5.63 percent, respectively, compared with 5.86 and 5.84 percent just before the last meeting. The Treasury paid down a net of some \$35 billion in the bill market during the period, including the maturity of \$12 billion in cash management bills. A paydown is typical at this time because of heavy seasonal tax receipts. About halfway through the period, though, the amount of bills offered at the weekly auctions began to rise steeply as the Treasury needed to recoup its cash in the face of a heavy underlying deficit. There

is a widespread expectation that the weekly auction amount will soon be back to the \$20 billion level prevailing earlier, and it may have to go considerably beyond that point.

Paralleling the decline in bill rates, the rates on commercial paper, acceptances and market-traded CDs fell about 35 to 45 basis points over the period. Meantime, as bank funding costs slipped, major banks lowered their prime rates by 1/2 percent to 8 1/2 percent the day after the discount rate cut.

In the intermediate and longer term markets the story was more mixed. Most rates declined, but less than in the short end, and longer term Treasury issues were about unchanged to up several basis points in yield over the period. For much of the intermeeting period, though, long Treasury yields were somewhat lower than at its start, especially after the weak employment report in early April and the improved price numbers toward the middle of that month. There was, in fact, considerable anticipation in the market around mid-April that the continuing signs of recession and better inflation news would spur a further policy easing--and even a little speculation that such a step might be underway as the funds rates tended to sag. The Desk's aggressive reserve draining move on April 15 was seen as a signal that policy was still on hold, and while this tended to back up short-term rates a bit, it had, if anything, a somewhat supportive effect at the long end as it seemed, to some, to underline the Fed's anti-inflationary resolve. Other observers, though, tended to focus on a spate of press articles and market letter commentaries that speculated on differences of views among

Federal Reserve officials, suggesting policy gridlock. Meantime, there was also a growing focus on the sheer size of oncoming supply, particularly as the Treasury's mid-quarter financing approached, as these quarterly events generally draw attention not only to the immediate financing need but to over-all needs for the next several months. As these needs were re-evaluated, there was a sense that the recent respite in Treasury needs, thanks to seasonal tax inflows, slack RTC activity, and Desert Storm receipts, was ending--to be followed by reassertion of the heavy underlying deficit.

The bond market was surprised by the timing of the April 30 discount rate announcement and accompanying Fed funds reduction, although not really surprised by the substance of the move given ongoing evidence of additional (even if abating) weakness in the economy and recently better price reports. Many observers had thought that after all the articles on policy differences a move would await an accumulation of more evidence on the economy and prices. Some ascribed the timing to the just-concluded G-7 meeting or to Administration pressures. Still, the long end took the news of a move reasonably well in stride, reacting on balance in a mildly positive manner--though without enthusiasm. The System's policy move was followed just a day later by the Treasury's financing announcement which covered not only the record-sized \$37 billion May refunding, but also provided official estimates of Treasury net cash needs for the current and following quarters--\$40 billion and \$110-115 billion, respectively--numbers that were generally to the high side of

market expectations. Initially, the market seemed a bit complacent about the heavy needs, but the April employment report released a couple of days later, with its less than expected decline in payrolls and surprising dip in the unemployment rate, reminded participants that heavy financings could be more of a problem in a recovering economy.

In the just completed mid-quarter financing, bidding was reasonably good for the 3-year note, very strong for the 10-year note, but weak for the 30-year bond--perhaps because the success of the first two legs generated some complacency or encouraged yields to edge off to a level where underlying retail demand was skimpy relative to the huge size being offered. At first, on being announced last Thursday, the weak bond auction results seemed to be accepted calmly, possibly in anticipation of a good PPI number the next day, but a more negative reaction set in on Friday, perhaps due partly to rumors about an insurance company's junk bond problems, and the new bond's yield rose about 12 basis points on that day alone. After some recovery yesterday, bond prices are down again today, apparently in reaction to a sizable upward revision in March retail sales. The new long bond now yields about 8.35 percent compared with its 8.21 percent auction average.

For the full period, as noted, yields on long-term Treasury maturities were about unchanged to up several basis points, the 5-year area was about 5 basis points lower and the 2 to 3 year range about 20-25 basis points lower. In all, the Treasury raised about \$37 1/2 billion in coupon issues over the

intermeeting period, about half of that in the mid-quarter financing that settles tomorrow.

Away from Treasury issues, other long-term markets tended to fare somewhat better, with quality spreads continuing to narrow from the high levels encountered late last year and through the year-end period. A number of bank holding companies have been able to float debt on much more favorable terms than seemed possible just a couple of months ago. In general, the corporate supply has been fairly brisk, but it appears that much of the new issuance is for refinancing of various sorts while net new capital demands remain slack.

As for current market expectations about policy, with the latest move still so recent, few if any observers look for a further step very soon. Some would suggest that with recovery likely to show up within a few months there may be no need for additional stimulus. Others, probably a little larger group, would still anticipate a modest further easing, either because an upturn is still so uncertain or because they believe it will be relatively feeble, and price pressures sufficiently quiescent as to justify another step.

Michael J. Prell  
May 14, 1991

FOMC BRIEFING -- DOMESTIC ECONOMIC OUTLOOK

The most obvious change in the staff's forecast since the last meeting is that we've cut our prediction of second-quarter GNP growth from 2 percent to zero. I want to focus my remarks on where we think we went wrong in our earlier projection and why we still think a solid, if unspectacular, recovery is imminent.

I perhaps should say that it isn't entirely clear that we were wrong about the second-quarter upturn; information on the current quarter is scant, and GNP yet could turn out to be as strong as we forecast in March. But that certainly didn't look like a good bet to us last week, and it still doesn't, given the latest data. This morning's retail sales report was stronger than we anticipated, with April showing only a slight decline and March being revised upward by a substantial amount. But when we scrutinize the details and consider possible offsets through higher imports, lower inventories, or weaker sales reports in later months, the surprise doesn't appear great enough to nudge us up by more than a few tenths of a percent on GNP growth. A conservative reaction to these data in assessing consumption trends may also be suggested by the figures for auto sales in the first 10 days of May. We don't have all the data yet, but it looks like sales of new domestic cars and light trucks were in line with our expectation of only a moderate rebound from the April's low pace.

In the March Greenbook, we anticipated that employment would be bottoming out about now and that industrial activity would be rising--not rapidly, but still significantly. The question is whether we were just off by a month or so in our timing or whether something has gone off track more fundamentally that has important implications for the outlook over the next few quarters. One approach to answering that question is to pinpoint some of the key factors that led us to lower our near-term forecast.

A significant part of that markdown story clearly is the lack of a pickup in auto sales. The consequent more moderate rise in motor vehicle assemblies has chipped almost a percentage point from our prior second-quarter GNP gain.

The sluggishness of auto sales may, in turn, be related to the disappointing performance of personal income. Weak employment data cut into estimated labor income in the first quarter, and with interest rates falling, interest income has fallen, too. Consumers actually spent more in the first quarter than we had expected they would, but in doing so they left themselves with less savings than we anticipated and thus with less wherewithal for second-quarter spending. Moreover, the decline in hours worked in April means that wage and salary income probably didn't improve much in that month. So, even with today's retail sales report, we'd expect a much smaller gain in consumer spending than we projected in March.

On the business side, also, near-term spending prospects look weaker than we expected they would at this point. To be sure, capital outlays usually lag turns in overall economic activity, but in this

instance there were were reasons for thinking that the revival might come a little sooner than usual--outside of commercial construction, that is. For one thing, we don't have to unwind a late-cycle surge in spending of the sort we've seen in some earlier expansions and, for another, there is a sense among businessmen that investment in up-to-date equipment is essential for survival, especially in the tradable goods sector. Moreover, there was the thought that the uncertainty associated with the war had led to a temporary postponement of orders--orders that would flood in shortly after that special uncertainty lifted. These notions still have their adherents among industry analysts, but the fact is that the March figures for nondefense capital goods were, to use a technical term, crummy, and the more recent anecdotal and survey information has not pointed convincingly to any big bounceback. Things thus seem to be proceeding in a fairly normal cyclical fashion in the equipment sector. While we expect real fixed investment to fall less than it did in the first quarter, outside of computers and motor vehicles the decline is still very sizable.

So, given these disappointments with respect to the second quarter, why do we still think that substantial growth in economic activity is just around the corner? The story is in large measure a familiar one in terms of traditional business cycle reasons. The first point is that housing seems to be turning around, in response to lower interest rates. The data could be clearer on this score, and perhaps they will be in the next week or two. But the overwhelming impression is that home sales are up, stocks of unsold homes are dwindling, and starts are beginning to rise.



The second reason for looking for a firming in activity is the inventory cycle. Our assessment is that, unless final demand for goods turns out appreciably weaker than we've already built into the forecast for the current quarter, we're going to see a third straight quarter of substantial inventory liquidation--all of this coming despite what appeared to be relatively lean stocks when the recession began. It's been said many times that lean inventories can suddenly look less so when there is an unanticipated drop in sales, and the drop since last summer has pushed stock to sales ratios in a few sectors up to uncomfortable levels. But our view is that these excess inventories are being cleaned out, and at some point production must move back in line with final sales. We think that will happen gradually over the coming months, with a slower pace of inventory decumulation in the third quarter and a modest accumulation in the fourth; however, we can already see some of this occurring now in motor vehicles, with lower stocks permitting a step-up in production that is having positive side-effects on a broad range of supplier industries. There may also be some hints of a similar process beginning in the industries associated with housing.

Stronger homebuilding and an end to inventory decumulation have been key factors in past recoveries and we expect they will be this time. With those drags on activity removed, employment and income growth should resume, and this should support expanded consumer spending. In due course, we expect to see equipment spending turn around as well. These domestic demand forces should more than offset the projected loss of impetus from the external sector.

What could go wrong? There is no shortage of candidates around today. Financial constraints loom large in many minds, and we do not take them lightly. Monetary policy, despite the easing steps to date, conceivably could still be too tight. For those so inclined, the April money stock deceleration might be a worrisome sign, and real interest rates certainly have been lower in the past. In addition, one cannot dismiss the concerns that neither households nor businesses, in the aggregate, are well positioned in terms of their balance sheets to spend freely. And, of course, there are the unusual problems of financial intermediaries, which may limit their capacity to provide credit.

I won't take the time to offer the counterarguments to these points. I think that we have given them their due in this forecast; along with the commercial real estate overhang and the limits on government spending, they have played a role in our projection that the recovery will be rather subdued by historical standards.

Our forecast contains risks on the upside, too. As we've noted before, unanticipated areas of strength have a way of cropping up in cyclical recoveries. It is still possible, for example, that business investment will turn around more quickly and strongly than we have anticipated. Or it may be that our trade position will continue its pattern of surprisingly strong improvement, owing to long-lagged effects of the earlier dollar depreciation on the location of facilities, or on the development of export programs and marketing channels. All things considered, even though our forecast for the next year or so probably is to the high side of the current consensus, we do think it reflects a reasonable balancing of risks.

Finally, a word about the inflation outlook. This morning's 0.2 percent increases in the overall CPI and in the ex food and energy component were close to what we were expecting and provide further confirmation of our view that we are experiencing a significant disinflationary payoff from the slack that has emerged in the labor and product markets. We see employment rising only gradually this summer, as businesses attempt to meet additional demand at first through longer workweeks and greater productivity; consequently, unemployment is likely to remain in the high 6s for some months. If growth moderates in 1992, as we've projected, it should be possible to sustain a clear downtrend in inflation through the year.

May 14, 1991

**FOMC BRIEFING**  
Donald L. Kohn

As background for the Committee's discussion, I thought it might be useful to look at recent and possible future policy decisions in the context of policy around previous business cycle troughs. In the process, I will be referring to the last three charts in the financial indicators package. Chart 10, the third from the end, shows movements of the federal funds rate. The lower panel isolates developments around cycle troughs. Data are presented for cycles beginning in 1961, with the exception of the credit controls cycle of 1980. Each plot is the difference in basis points of the federal funds rate from its value at the trough of a given cycle. To facilitate comparisons, the current cycle, the thicker line in the lower panel, was drawn assuming a May trough and a 5-3/4 percent federal funds rate this month.

Several characteristics stand out from the lower panel. One is that the decline in the federal funds rate this time has been less than in the later stages of most other cycles. Of course, unlike most other cycles, the rate had been falling earlier, before the cycle peak. Still, the impression from this as well as other measures of monetary policy, which we will be looking at in a few minutes, is of a relatively modest policy ease this time, appropriate to a shallow recession whose expected end is ascribed in part to an unwinding of oil and war-related effects.

The second notable aspect of the patterns in the lower panel is that in every business cycle charted, the funds rate has continued to

fall for a few months after the trough. The policy strategy followed in the past, in effect, has been one of easing until there were fairly definitive signs of a recovery--the extension beyond the trough perhaps representing a recognition lag stemming from the timing of data availability. From one perspective this policy strategy might seem to be less than optimal, since, given the usual lags, the decline in rates around the trough would have minimal effect on the actual bottoming out of the economy or its performance early in the recovery. However, ex ante, one can never be certain when the trough will be or how strong a recovery is in train. Easing as long as the economy may be declining guards against the possibility of a considerably delayed trough and substantial further shortfalls in output and employment, even when the most likely forecast is for a reasonably healthy near-term recovery. Easing into a trough also may make sense if the Committee had in mind some level of nominal spending in the intermediate run that balanced considerations of longer-run inflation objectives and shorter-run output constraints; under these conditions, the further the economy falls relative to expectations, the further must interest rates also decline to induce a return to desired nominal spending within a given period.

At this meeting, with signs of an actual upturn still mixed, such a strategy might be characterized as something like alternative A, or at least a directive biased toward ease with a presumption of some further action as long as the indicators suggested on balance that activity wasn't picking up. In the current situation, this approach might be seen as particularly appropriate if there were concerns that

financial constraints, the high dollar and slow growth abroad, and fiscal restraint on the federal and state and local levels raised unacceptable risks of prolonged weakness or an unnecessarily slow rebound.

This strategy implies the need to be ready to tighten early in the recovery once a solid expansion is established. Although this was done in some past cycles, it is also true that many of these cycles come from a period--1965 to 1979--in which inflation accelerated, implying that on average policy was too easy. It is not possible to pinpoint where policy mistakes were made--that is, at the trough or in the recovery. Nonetheless, that experience does suggest that if policy is eased into and beyond the trough, the Committee should be alert to the potential need for fairly prompt and substantial tightening early in the expansion to contain subsequent inflation.

In a sense, alternative B could be seen as an attempt to reduce the need for what could be a difficult decision to tighten significantly relatively early in an expansion. Especially with continuation of the symmetrical language in the directive, alternative B would represent a more cautious approach to policy around the trough than has been followed in the past. I might note, parenthetically, that the absence of an alternative C in the bluebook resulted from a judgment about an immediate tightening at this meeting, reversing policy unusually quickly after a discount rate cut and at a time when money and credit was sluggish and the economic upturn uncertain; it was not a comment on the desirability of a symmetrical approach to intermeeting adjustments.

The alternative B approach implies some confidence that the turnaround is indeed at hand, or at least that the risks of further decline on the one hand or excessively strong rebound on the other are evenly balanced. A cautious approach to easing, even as indicators may be suggesting the possibility of continuing economic weakness, could be seen as helping to insure that the disinflationary forces of the current downturn are not soon dissipated in the expansion. As noted, such a policy course would take some pressure off the need to tighten soon after the trough to sustain a downward trajectory of inflation. Indeed, as Mike has indicated, in the greenbook forecast, a flat federal funds rate through the forecast horizon is thought sufficient to produce lower levels of core inflation, given the outside forces expected to be restraining aggregate demand and cost pressures.

Judgments about policy strategy over coming months need to consider not only incoming data on the economy and the current level of nominal interest rates, but other possible indicators of the thrust of policy. The next two charts depict the behavior of two of these--real short-term interest rates and real M2--in a cyclical context. Real interest rates, as calculated for the next chart, fell early in the recession, as a result of the surge in near-term inflation expectations that followed the oil shock. The reductions in nominal rates since then seem primarily to have kept pace with the drop in inflation expectations accompanying the weak economy and the reversal of the earlier surge in oil prices. The recent level of real short-term rates, shown in the

upper panel, is estimated to be well below that of late 1982 and somewhat under 1986 and early 1988, all of which were followed by rapid economic expansion. Still, these rates are above some earlier cycle troughs, though this may be appropriate in light of the inflation acceleration that followed in those earlier expansions, as well as the shallowness of the current recession. With regard to long-term real rates, which are not shown, the corporate rate appears to be a little below the level estimated as consistent through the 1970s and 1980s with output at the level of its potential, and so should imply a recovery in the economy toward its potential level. Restraint on fiscal policy and credit supplies might argue that lower short- and long-term real rates are needed this time to foster adequate expansion. However, there are forces tugging in the opposite direction as well, including the demands for financial and physical capital in eastern Europe and the Middle East.

The last chart shows the behavior of real M2 around cycle troughs. This chart was constructed somewhat differently from the others in that it is in growth rate terms, was not indexed to equal the same value at the trough, and shows, by the dashed thick line, the staff projection of future real money growth consistent with the greenbook forecast. As in other cycles, real M2 has accelerated in advance of the putative cycle trough, but it has slowed most recently and its growth rate generally has been on the low side of other recessions. Real M2 growth in the recovery is projected to be unusually modest, in part as the counterpart to the relatively slow recovery in the forecast. Damped



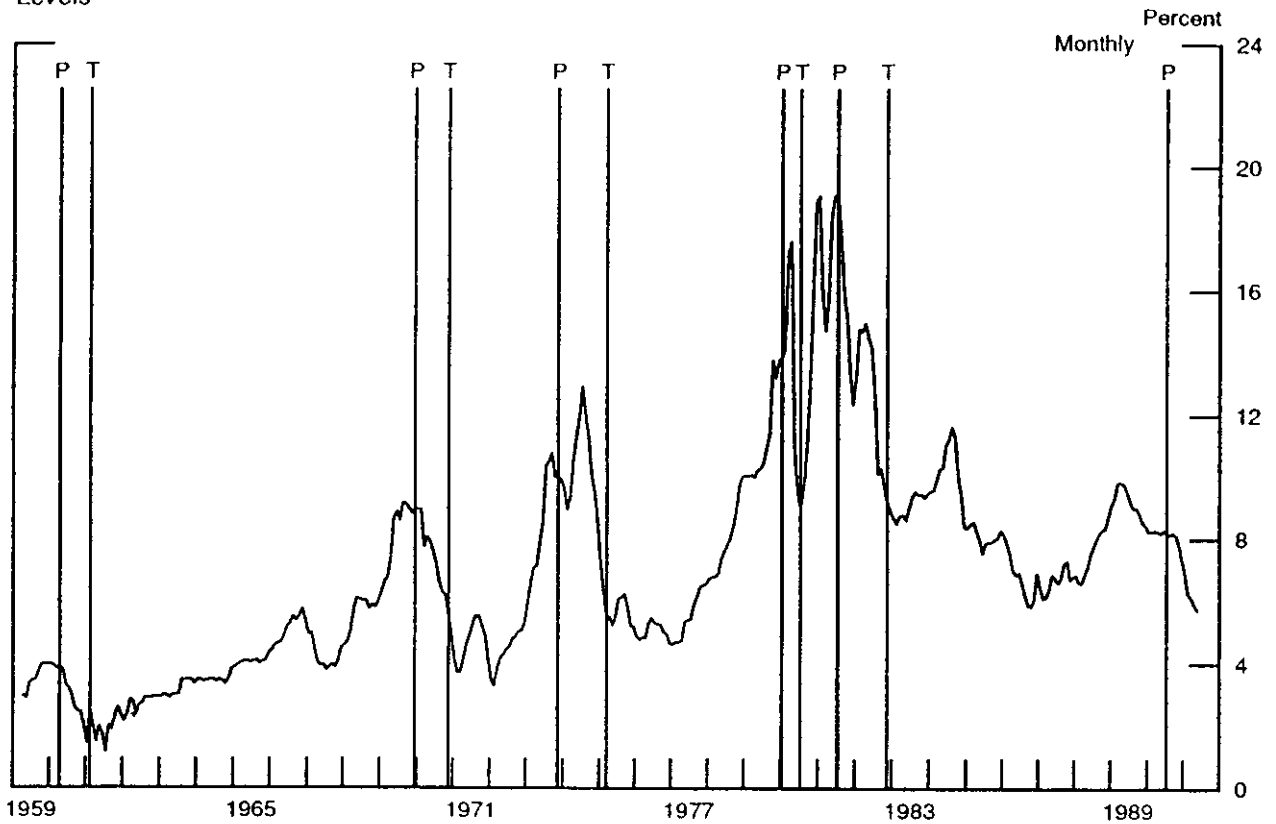
money growth also is consistent with continuing restraint on inflation, and this is indicated by the  $P^*$  model as well. In this model,  $P^*$  is below  $P$  at the current time and throughout the forecast period, producing an inflation forecast quite similar to that of the greenbook.

The real M2 growth shown and the  $P^*$  simulations were based on a projection of 5 percent nominal M2 growth for this year. M2 and M3 growth in April were appreciably weaker than we had anticipated. April is always a difficult month in which to separate cyclical from seasonal or noise elements in money supply data, given the huge but irregular volume of tax-related transactions flowing through household accounts. The various documents prepared for this meeting attempted to throw some light on this shortfall, emphasizing elements of uncertainty and of possible variations in money demand not closely related to the economic outlook. Moreover, fragmentary data for early May, including information becoming available this morning, suggest a rebound this month, tending to reinforce our assessment of the transitory nature of the April shortfall. If the projected pickup in May and June does not occur, however, and M2 is on a trajectory that suggests growth appreciably below the midpoint of its range, the contrast with previous cycles would be even more marked. Indeed, such a path for M2 might signal that interest rates or other elements related to credit conditions were inconsistent with the desired turnaround in the economy. On the other hand, especially if additional easing were undertaken in the near-term, money growth could rebound sharply over coming months with the lower interest rates and stronger economy. Monetary expansion toward or above

the upper end of the range later this year might signal the Committee that a tightening was needed to preserve the long-run anti-inflation thrust of policy.

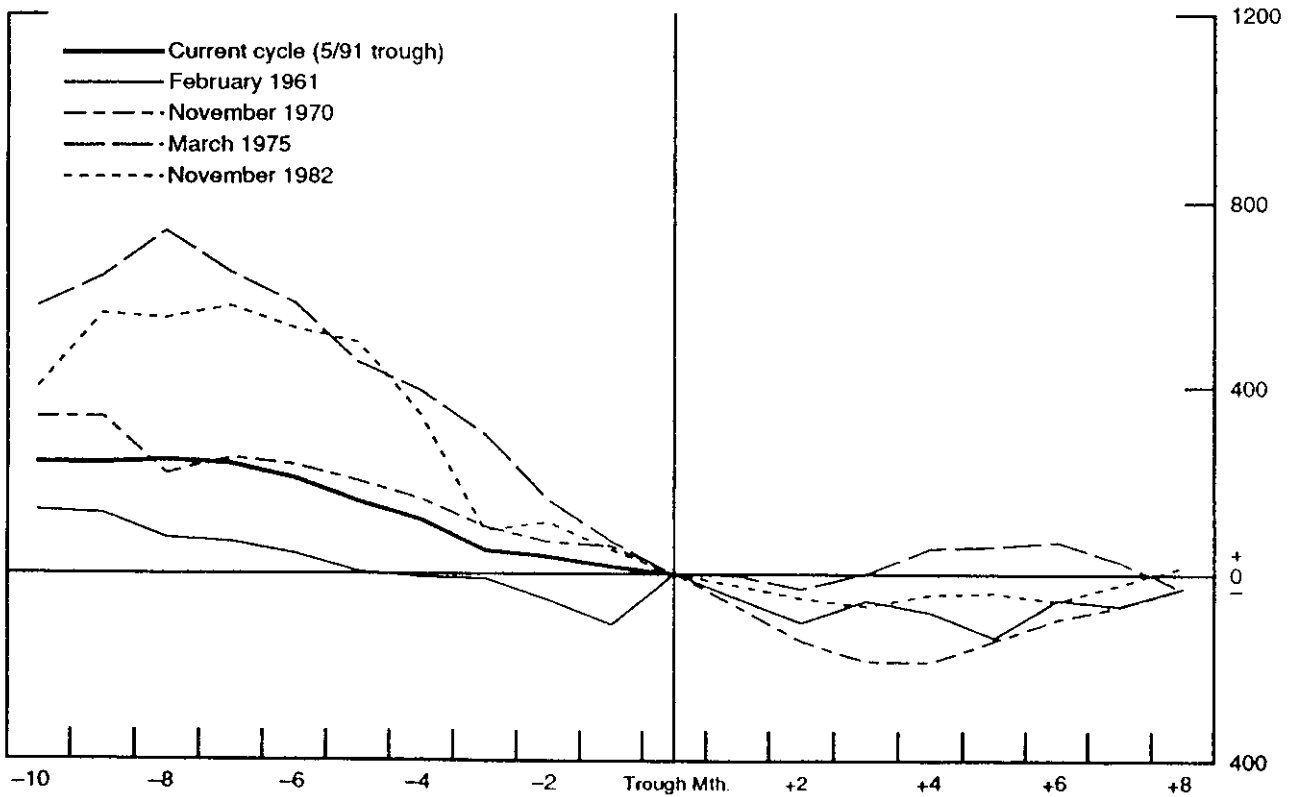
## Federal Funds Rate

Levels



## Federal Funds Rate Around Cycle Troughs\*

Basis Points

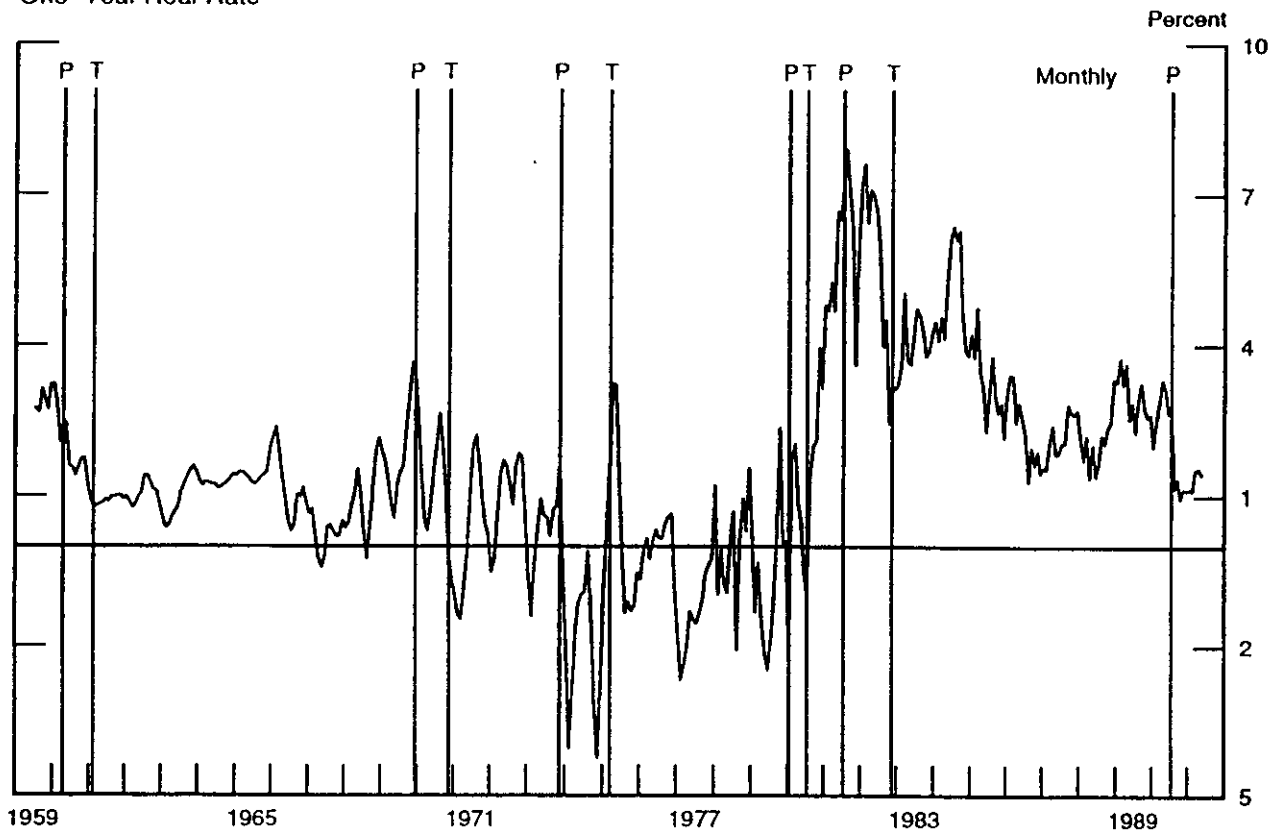


\*Monthly rate less rate during trough month.

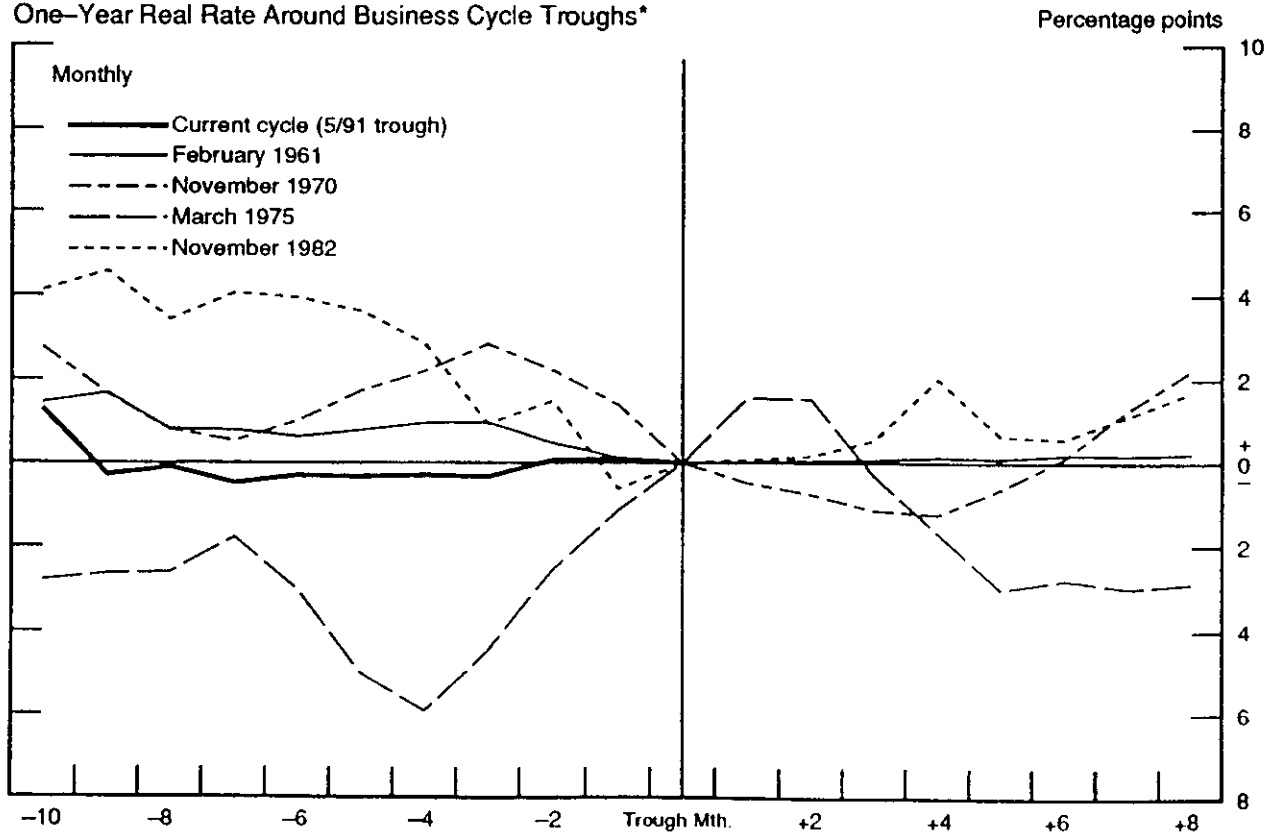
# Real Interest Rates

1-year Treasury Bill Rate Less Michigan Survey 1-year Inflation Expectation

## One-Year Real Rate



## One-Year Real Rate Around Business Cycle Troughs\*

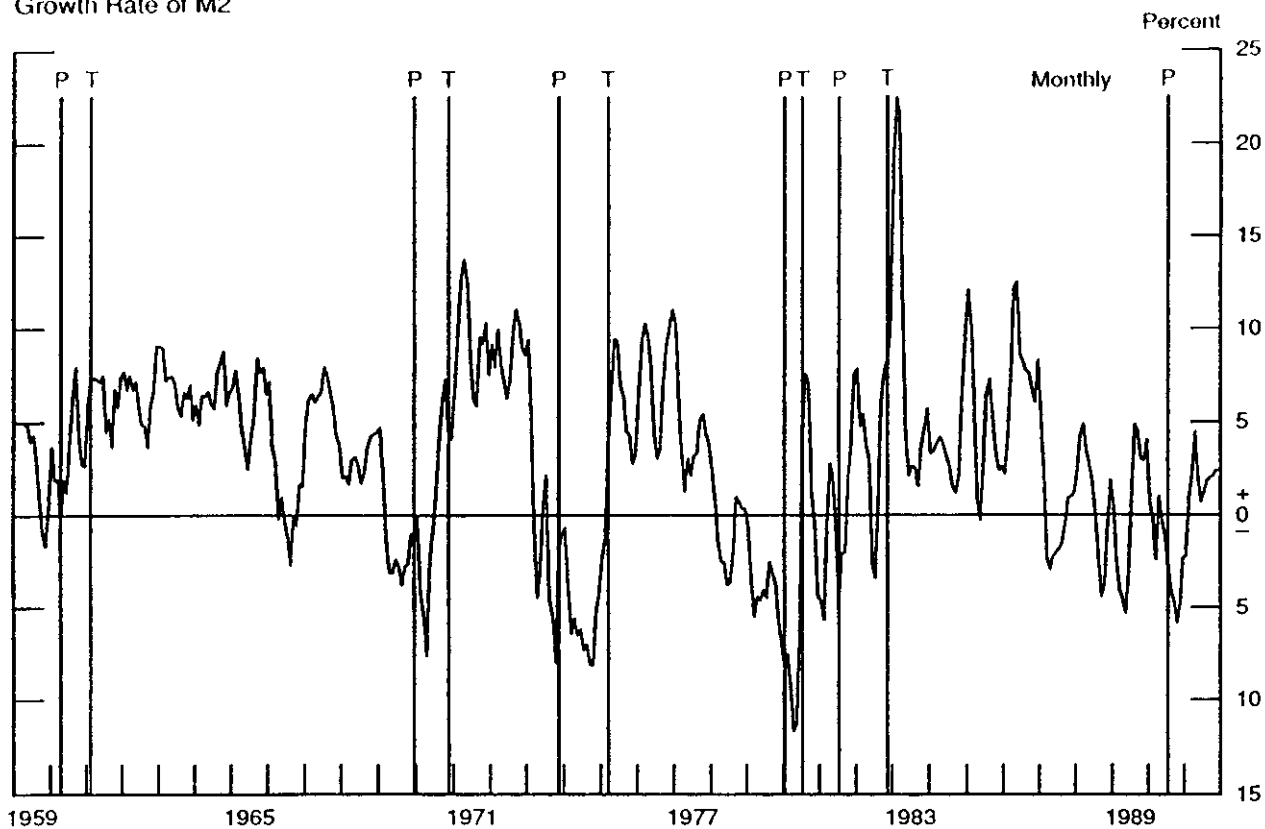


\*Real rate less rate during trough month.

# Real M2

(M2 Deflated by CPI; 3-month change, annualized)

## Growth Rate of M2



## Real M2 Growth Rates Around Business Cycle Troughs

